

MiRA Test

Microbiological test with spores of *Geobacillus stearothermophilus* for the detection of antimicrobial agent residues in milk



Clear color change interpretation

Results within 4 hours

Some groups of antimicrobial agents, including beta-lactams and tetracyclines, are thermo-sensitive: the molecules belonging to those chemical classes are rapidly inactivated at growth temperature of thermophilic bacteria. The **MiRA Test** includes a quick pre-incubation in which *G. stearothermophilus* is allowed to germinate and proliferate, followed by a phase at room temperature suitable to allow the contact between the vegetative form of *Geobacillus* and the thermo-sensitive antibiotics, if present in the sample. Finally, the tube is reintroduced into the incubator for the last incubation. The incubation sequence of **MiRA Test** is the critical characteristic that allows the method to reach extremely low detection limits.

MiRA Test

Ref. 80355

Content of the package: 50 tests






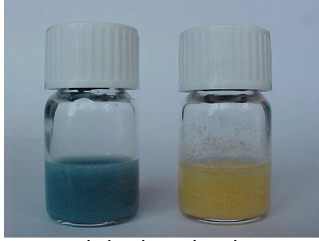


LIOFILCHEM® s.r.l.

Via Scozia zona ind.le, 64026 Roseto degli Abruzzi (Te) Italy

Tel. +39 0858930745 Fax +39 0858930330 www.liofilchem.net liofilchem@liofilchem.net

Test procedure

1	2	3
 <p>Pack content: liquid medium + spore cartridge.</p>	 <p>Add 1 disc of spores to the medium.</p>	 <p>Pre-incubate for 20' at 64 ± 0.5 °C.</p>
4	5	6
 <p>Remove the vial from the incubator and let it reach room temperature (roughly 5'). Introduce 1 mL of the milk sample. Let the antimicrobial agent, if present, act at room temperature for 20'.</p>	 <p>Reintroduce the vial in the waterbath or in the Thermoblock at 64 ± 0.5 °C for the second incubation for 3h - 3h 30'.</p>	 <p>Watch for the color change of the medium in the vials. No color change (green-blue color): milk sample containing antimicrobial agent residues in concentration above the detection limits. Color change (yellow color): milk sample containing no antimicrobial agent residues, or residues in concentration under the detection limits.</p>

Antimicrobial agents	MRL for milk MAXIMUM RESIDUE LIMITS (µg/kg)	MiRA Test Sensitivity in 3h 30' ¹ DETECTION LIMITS (µg/kg)
BETA-LACTAMS		
Penicillin G	4	2-4
Ampicillin	4	2-4
Oxacillin	30	<10
Cloxacillin	30	<10
Dicloxacillin	30	<10
Amoxicillin	4	2-4
Benzylpenicillin	4	2-4
Nafcillin	30	15-30
Penethamate	4	2-4
Cefalexin	100	50-100
Cefazolin	50	25-50
Ceftiofur	100	50-100
Cephapirin	60	5-10
Cefquinome	20	10-20
TETRACYCLINES		
Tetracycline	100	50-100
Clortetracycline	100	50-100
Oxytetracycline	100	50-100
MACROLIDES		
Erythromycin	40	<10
Tylosin	50	25-50
Tilmicosin	50	20-40
Spiramycin	200	100-200
LINCOSAMIDES		
lincomycin	150	75-150
Pirlimycin	100	<50
AMINOGLYCOSIDES		
Gentamicin	100	50-100
Neomycin	1500	<100
Streptomycin	200	<100
Dihydrostreptomycin	200	<100
SULPHAMIDES		
Sulfadiazine	100	<150
SULFANILAMIDES		
Sulfadimidine	100	<200
BENZIL PYRIMIDINE		
Trimethoprim	50	25-50
QUINOLONES		
Flumequine	50	50-100
Enrofloxacin	100	50-100
NOVOBIOCIN		
Novobiocin	50	100-200

¹ Sensitivity of **MiRA Test** to antimicrobial agents commonly used in veterinary medicine and relevant MRL (Maximum Residue Limits) values valid in Europe. (Regulation 37/2010 EC)